Syllabus for 18.06 Linear Algebra, Spring 2006

MWF 11–12 Room 54-100

The three midterm exams will be held in Walker during lecture hours: closed book. All grading is by your recitation instructor!

W	2/8	The Geometry of Linear Equations	1.1–2.1
F	2/10	Elimination with Matrices	2.2–2.3
M	2/13	Matrix Operations and Inverses	2.4–2.5
W	2/15	LU and LDU Factorization	2.6
F	2/17	Transposes and Permutations	2.7
T	2/21	Vector Spaces and Subspaces	3.1
W	2/22	The Nullspace: Solving $Ax = 0$	3.2
F	2/24	Rectangular $PA = LU$ and $Ax = b$	3.3–3.4
M	2/27	Row Reduced Echelon Form	3.3–3.4
W	3/1	Basis and Dimension	3.5
F	3/3	The Four Fundamental Subspaces	3.6
M	**3/6**	**Exam 1: Chapters 1 to 3.5**	
W	3/8	Graphs and Networks	8.2
F	3/10	Orthogonality	4.1
M	3/13	Projections and Subspaces	4.2
W	3/15	Least Squares Approximations	4.3
F	3/17	Gram-Schmidt and $A = QR$	4.4
M	3/20	Properties of Determinants	5.1
W	3/22	Formulas for Determinants	5.2
F	3/24	Applications of Determinants	5.3
M-F	3/27-31	*SPRING BREAK*	
M	4/3	Eigenvalues and Eigenvectors	6.1
W	4/5	Exam review	
F	**4/7**	**Exam 2: Chapters 1–5**	
M	4/10	Diagonalization	6.2
W	4/12	Markov Matrices	8.3
F	4/14	Fourier Series and Complex Matrices	8.5, 10.2
M	4/17	*PATRIOTS DAY*	
W	4/19	Differential Equations	6.3
F	4/21	Symmetric Matrices	6.4
M	4/24	Positive Definite Matrices	6.5
W	4/26	Matrices in Engineering	8.1
F	4/28	Singular Value Decomposition	6.7
M	5/1	Similar Matrices	6.6
W	5/3	Linear Transformations	7.1–7.2
F	5/5	Choice of Basis	7.3–7.4
M	5/8	Exam Review	
W	**5/10**	**Exam 3: Chapters 1–8 (8.1, 2, 3, 5)**	
F	5/12	Fast Fourier Transform	10.3
M	5/15	Linear Programming	8.4
W	5/17	Numerical Linear Algebra	9.1–9.3
M-F	**5/22-26**	**Final Exams**	